CLAIMS

What is claimed is:

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A method comprising:

partitioning a non-volatile storage media;

storing data in a first partitioned section of the non-volatile storage media;

- 4 and
- storing, in a second partitioned section of the non-volatile storage media, 5
- metadata corresponding to the data stored in the first partitioned section of the non-6 volatile storage media. 7
 - The method of claim 1, wherein storing the metadata as packed 2. metadata block.
 - 3. The method of claim 1) wherein the partitioning is logical.
 - The method of claim 1, wherein storing cache data in the first 4. partitioned section.
- The method of claim 4, further comprising: 1 5.
- 2 updating the data and metadata atomically when a line of cache data in the
- 3 first partitioned section is changed.
- The method of claim 1, further comprising: 6. 1
- allocating a portion of a mass storage device as the non-volatile storage 2
- 3 media.

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A non-volatile memory comprising: 7.

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a first section to store data, and

a second section partitioned from the first section, the second section to store metadata for the data stored in the first section.

- 1 8. The memory of claim 7, wherein the second section is to store the 2 metadata as packed metadata blocks.
- 1 9. The memory of claim 7, wherein the partitioning of the first section 2 and the second section is logical.
- 1 10. The memory of claim 7, wherein the non-volatile memory is a portion 2 of a massive storage device.
 - 11. The memory of claim 10, wherein the mass storage device is one of a disk drive, a Flash memory, a ferroelectric random access memory, or a polymer ferroelectric random access memory.
 - 12. The memory of claim 7, wherein the non-volatile memory is a cache memory.
 - 13. A system comprising:
- 2 a non-volatile storage media having a first section and a second section 3 partitioned from the first section; and
- a memory control hub to cause the first section to store data and the second section to store metadata for the data stored in the first section.
- 1 14. The system of claim 13, wherein second section is to store the 2 metadata as packed metadata blocks.

15. The system of claim 13, wherein the partition is logical.

- 16. The system of claim 15, further comprising a massive storage device
- 2 and wherein a portion of the massive storage device is the non-volatile storage
- 3 media.
- 1 17. The system of claim 13, wherein the non-volatile storage media is a
- 2 cache memory.
- 1 18. A method comprising:
- 2 partitioning a non-volatile storage media;
 - storing cache data in a first partitioned section of the non-volatile storage
- 4 media;
 - storing metadata corresponding to the cache data in a second partitioned section of the non-volatile storage media; and
 - accessing the second partitioned section to determine the state of the cache data in a system boot.
- 1 19. The method of claim 18, wherein storing the metadata in the second 2 partitioned section as packed metadata blocks.
- 1 20. The method of claim 18, wherein the partition is logical.
- 1 21. The method of claim 18, further comprising:
- 2 updating the cache data and metadata atomically when a line of cache data
- 3 in the first partitioned section is changed.
- 1 22. A program loaded in a computer readable medium comprising:

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a first group of computer instructions to logically partition a non-volatile storage media;

a second group of computer instructions to store data in a first partitioned section of the non-volatile storage media; and

- a third group of computer instructions to store metadata for the data in a second partitioned section of the non-volatile storage media.
- 23. The program of claim 22, wherein the second group of computer 1 2 instructions include computer instructions to store the metadata as packed 3 metadata blocks.
 - 24. The program of claim 22, wherein the second group of computer instructions include computer instructions to store cache data as the data in the first partitioned section.
 - The program of claim 24, further comprising: 25. computer instructions to update the data and metadata atomically when a line of cache data in the first partitioned section is changed.
 - 26. The program of claim 2#, further comprising: computer instructions to access a line of the second partitioned section to read metadata for the cache data in the first partitioned section.
- 1 27. A program loaded in a computer readable medium comprising: 2 a first group of computer instructions to logically partition a non-volatile storage media; 3
- a second group of computer instructions to store cache data in a first 4 partitioned section of a non-volatile storage media; 5

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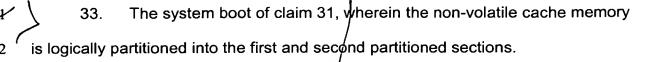
a third group of computer instructions to store, in a second partitioned section of the non-volatile storage media, metadata corresponding to the cache data stored in the first partitioned section; and

a fourth group of instructions to access the second partitioned section to determine the state of the cache data.

- 28. The program of claim 27, wherein the third group of computer instructions includes computer instructions to store the metadata as packed metadata blocks.
- 29. The program of claim 27, further comprising:

 computer instructions to update the cache data and metadata atomically when a line of cache data in the first partitioned section is changed.
- 30. The program of claim 27, further comprising:

 computer instructions to allocate a portion of a mass storage device as the non-volatile storage media.
 - 31. A system boot comprising:
- accessing a first partitioned section of a non-volatile cache memory to read metadata for cache data stored in a second partitioned section of the non-volatile cache memory; and
- determining the state of the dache data based upon the read metadata to initialize the non-volatile cache memory for the system boot.
- 1 32. The system boot of claim 31, wherein the metadata is stored in the 2 first partitioned section as packed metadata blocks.



- 34. The system boot of claim 3√, further comprising: allocating a portion
- of a mass storage device as the non-volatile cache memory.
- 1 35. The system boot of claim/34, wherein the mass storage device is one
- of a disk drive, a Flash memory, a ferroelectric random access memory, or a
- 3 polymer ferroelectric random access/memory.